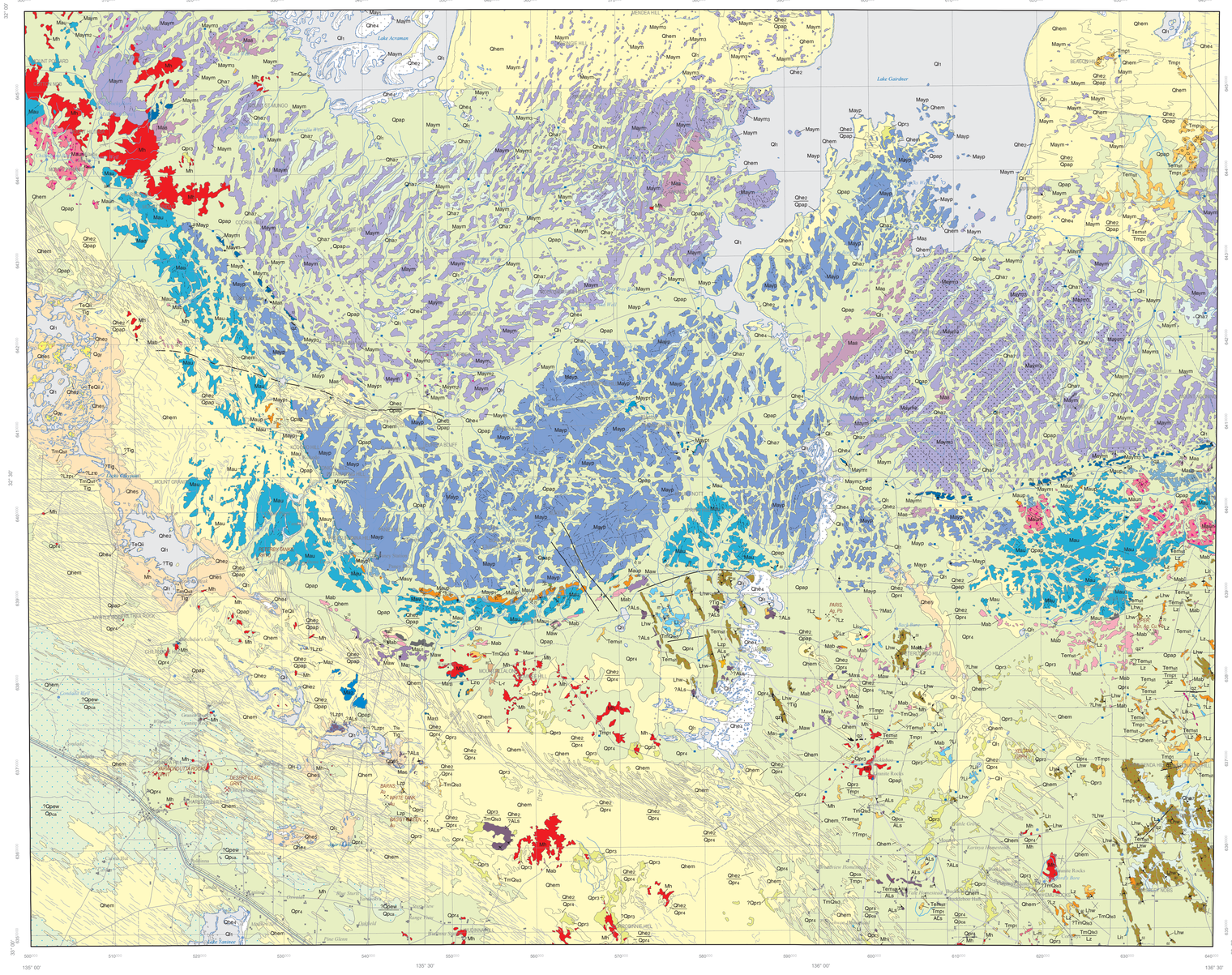
YARDEA

GEOLOGICAL SURVEY OF SOUTH AUSTRALIA
DEPARTMENT FOR ENERGY AND MINING

AUSTRALIA 1:250 000

SA GEOLOGICAL ATLAS SERIES SHEET SI5303



REFERENCE

HOLOCENE

- Qha$_7$ — HOLOCENE ALLUVIAL/FLUVIAL UNIT 7: Holocene talus/scree deposits. High angle colluvial to alluvial sediments.
- Qhe$_3$ — HOLOCENE AEOLIAN UNIT 2: Holocene sand capping dunes in dunefields.
- Qhe$_4$ — HOLOCENE AEOLIAN UNIT 4: Holocene gypsiferous dunes/lunettes.
- Qhe$_5$ — HOLOCENE AEOLIAN UNIT 5: Holocene brown sand in depressions.
- Qhem — MOORNABA SAND: Sand, aeolian, off-white and pale yellow, quartz-rich with carbonate pipes.

PLEISTOCENE-HOLOCENE

- Qr$_1$ — QUATERNARY LACUSTRINE/PLAYA UNIT 1: Quaternary playa sediments.
- Qgy — QUATERNARY GYPCRETE: Undifferentiated Quaternary gypcrete.

PLEISTOCENE

- Qpew — WAIBUNA FORMATION: Silt to fine-grained sand, orange-brown, calcareous, conglomeratic in part, Aeolian.
- Qpap — POORAKA FORMATION: Clay, sand and carbonate earth, silty, with gravel lenses.
- Qpcb — BRIDGEWATER FORMATION: Coastal barrier and shallow sub-tidal sediments: bioclastic and aeolian cross-bedded calcarenite, paleosol horizons, often capped by calcrete.
- Qpr$_3$ — PLEISTOCENE REGOLITH/COLLUVIAL UNIT 3: Pleistocene red-brown clayey sand with hardpan.
- Qpr$_4$ — PLEISTOCENE REGOLITH/COLLUVIAL UNIT 4: Pleistocene gravel, clay, silt and sand with soft carbonate, overlying nodular/tabular calcrete.
- Qplca — PLEISTOCENE CALCRETE: Undifferentiated Pleistocene calcrete.

MIOCENE-PLEISTOCENE

- TmQrfe$_2$ — MIOCENE-PLEISTOCENE FERRICRETE UNIT 3: Miocene to Pleistocene ferruginisation approx coeval with TmQra1.
- TmQrsi$_1$ — MIOCENE-PLEISTOCENE SILCRETE UNIT 1: Regionally younger silcrete; approx Late Miocene-Pleistocene.

MIOCENE-PLIOCENE

- TmQrs — MIOCENE-PLIOCENE UNIT 1: Miocene to Pliocene ferruginous pebbly grit, conglomerate, fine sandstone.

EOCENE-PLEISTOCENE

- TeQli — ILKINA FORMATION: Clay, silt, sand, laminated to thinly bedded, local clasts of silcrete and ferricrete. Locally capped by gypsum crust. Palaeochannel fill.
- Tig — GARFORD FORMATION: Mudstone, carbonate, stromatolitic, oncolitic and oolitic, gastropods, minor sandstone and grit horizons. Upward change from argillaceous to carbonate mudstone. Lacustrine to flood plain.

EOCENE-MIOCENE

- Temsi$_1$ — EOCENE-MIOCENE SILCRETE UNIT 1: Regionally older silcrete; approx Late Eocene-Mid Miocene.

TERTIARY

- Tfe — TERTIARY FERRICRETE: Undifferentiated Tertiary ferricrete.

MESOPROTEROZOIC

- Mh — HILTABA SUITE: Granite, syenite, quartz monzonite, granodiorite, monzodiorite: coarse, megacrystic to equigranular, to fine-grained, granophyric, equigranular or porphyritic. Undeformed to locally strongly deformed. Minor mafic to ultramafic intrusive rocks. I to A-type, ~1600-1575 Ma.
- Mh$_1$ — HILTABA SUITE UNIT 1: Phenocrystic granite and adamellite; large K-feldspar and plagioclase phenocrysts.
- Ma$_2$ — GAWLER RANGE VOLCANICS UNIT 2: Dacite, highly porphyritic. Mt Sturt area.
- Ma$_6$ — GAWLER RANGE VOLCANICS UNIT 6: Andesite, dacite dykes.
- Ma$_{10}$ — GAWLER RANGE VOLCANICS UNIT 5: Porphyritic rhyolite and rhyodacite dykes and plugs. Intrudes May.
- Ma$_{13}$ — GAWLER RANGE VOLCANICS UNIT 13: Dacite, highly porphyritic. Wauliinna Hill area; intrudes massive to weakly foliated granite to SE.
- Ma$_{14}$ — GAWLER RANGE VOLCANICS UNIT 14: Dacite, highly porphyritic. Peterlumbo area; dykes intrude Bittali Rhyolite.
- May$_1$ — YARDEA DACITE UNIT 1: Rhyolitic tuff.
- Maym — MOONAREE DACITE MEMBER: Dacite, massive, red, commonly columnar jointed; porphyritic with phenocrysts of plagioclase, pyroxene.
- Maym$_3$ — MOONAREE DACITE MEMBER UNIT 3: Dacite, massive, red-brown, porphyritic; up to 1 per cent quartz phenocrysts in microcrystalline groundmass.
- Maym$_2$ — MOONAREE DACITE MEMBER UNIT 2: Dacite, massive, red, porphyritic; with scattered granitoid and lithic clasts at "Yardea" and "Yarna".
- Maym$_1$ — MOONAREE DACITE MEMBER UNIT 1: Dacite, massive, black, grey or brown, sometimes flow-banded; welded/ponded base of flow.
- Mayp — PONDANNA DACITE MEMBER: Dacite, massive, red, commonly columnar jointed; porphyritic with phenocrysts of plagioclase, pyroxene.
- Mayp$_3$ — PONDANNA DACITE MEMBER UNIT 3: Dacite, amygdaloidal, vesicular; top of flow.
- Mayp$_1$ — PONDANNA DACITE MEMBER UNIT 1: Dacite, massive, black, grey or brown, sometimes flow-banded; welded/ponded base of flow; age(U-Pb)=1592+/-3Ma.
- Mam — MOUNT DOUBLE IGNIMBRITE: Ignimbrite, layered, black, with lithic clasts, quartz and feldspar fragments, fiamme and flattened shards.
- Mau — EUCARRO RHYOLITE: Rhyolite, massive, red to pink, columnar-jointed, subhedral phenocrysts of plagioclase, olivine, pyroxene and hornblende, rare free quartz. A-type.
- Maup — PANEY RHYOLITE MEMBER: Rhyolite, fine to coarse-grained, porphyritic, commonly flow-banded. Near Conflagration Dam contains large lithic clasts.
- Mav — YANNABIE RHYOLITE MEMBER: Rhyolite, amygdaloidal, vesicular, abundant free quartz; top of flow.
- Maun — NONNING RHYOLITE MEMBER: Rhyolite, massive, red to pink, columnar-jointed; with scattered granitoid and lithic megacryst-bearing clasts.
- Mau$_2$ — EUCARRO RHYOLITE UNIT 1: Dacite, dark grey, densely welded at or near base. Based on unit within Eucarro Rhyolite on YARDEA.
- Ma$_8$ — GAWLER RANGE VOLCANICS UNIT 8: Lower Gawler Range Volcanics: Boleitic basalt to rhyolite lava, ignimbrite and tuff, includes Ealbara Rhyolite, Konkaby Basalt, Chitanliga Volcanic Complex, Glyde Hill Volcanic Complex, Lake Gairdner Rhyolite, Waganny Dacite, Bittali Rhyolite, Roopena Basalt, Angle Dam Volcanics, Ma1, and Ma15 to Ma18. 1592-1591 Ma.
- Mab — BITTALI RHYOLITE: Rhyolite to rhyodacite lavas and ignimbrites, feeder dykes and tuffs.
- Maw — WAGANNY DACITE: Dacite-rhyodacite, porphyritic; dacite; andesite. Age of equivalent at Toondulya Bluff (U-Pb)1591+/-3 Ma.
- Ma$_{11}$ — GAWLER RANGE VOLCANICS UNIT 1: Porphyritic rhyolite.

PALAEOPROTEROZOIC

- Lr — CORUNNA CONGLOMERATE: Conglomerate, boulder and pebble; sandstone; minor talus breccia, siltstone, tuff, dolomite. ~1680-1590 Ma.
- Lz — PETER PAN SUPERSUITE: Magmatic rocks, felsic and lesser mafic. Intruded during the Kimban Orogeny and dated ~1750-1700Ma.
- Δ^2_{10} — PETER PAN SUPERSUITE UNIT 10: Granite, leucocratic, riebeckite; granite, mottled, cream, brown, dark grey; granite, massive to weakly foliated. Based on Pmt-gamma-k on YARDEA.
- Lzp — PINBONG SUITE: Granite to quartz monzonite, typically grey, plagioclase-rich, mica-bearing, weakly deformed to migmatitic, alkali-calcic, lesser gabbro, dolerite, tholeiitic to calc-alkaline. ~1735-1700Ma (U-Pb).
- Lzp$_1$ — PINBONG SUITE UNIT 1: Gabbro; metagabbro; dolerite; U-Pb age ~1730-1710Ma.
- Ll — MIDDLEBACK SUBGROUP: Jaspilite; quartzite; gneiss; quartz-mica schist; dolomitic marble.
- Ll$_1$ — MIDDLEBACK SUBGROUP UNIT 1: Lower and/or Upper Middleback Jaspilite: amphibole-magnetite schist and quartzite.
- Lth — KATUNGA DOLOMITE: Marble, white to pale grey, dolomitic, layered with serpentine, with calcite-diopside-tremolite banding.
- Lhw — WARROW QUARTZITE: Quartzite, massive to flaggy and micaceous; pelitic schist; quartz-pebble conglomerate; minor calc-silicate gneiss and marble.
- L-mh — MILTALIE GNEISS: Gneiss, grandic, grey, medium to coarse, equigranular, foliated, pegmatitic segregations, concordant amphibolite. ~2017-1984 Ma.

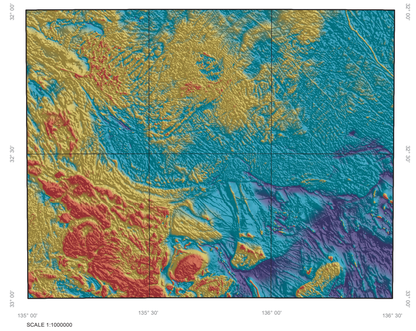
ARCHAEAN-PALAEOPROTEROZOIC

- ALs — SLEAFORD COMPLEX: Paragneiss, arenaceous and aluminous; iron formation; grandic gneiss; felsic and mafic-ultramafic volcanic and intrusive rocks. Granulite to amphibolite facies. Protoliths ~2325-2410 Ma.

MISCELLANEOUS

- QV — QUARTZ VEIN: Quartz veins/bodies, undifferentiated.

TOTAL MAGNETIC INTENSITY IMAGE



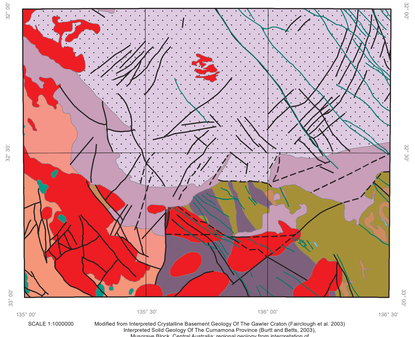
SCALE 1:1000000

The Total Magnetic Intensity Image has been compiled using aeromagnetic data from the Department for Energy and Mining, South Australia. Aeromagnetic data have been merged, gridded and image processed by the Geological Survey of South Australia.

nTesla: -1301.165 | -554.649 | -12.093 | 530.463 | 6710.625

A two standard deviation contrast stretch has been applied to the raster image above.

SOLID GEOLOGY INTERPRETATION



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Modified from Interpreted Crystalline Basement Geology Of The Gawler Craton (Fairclough et al. 2003) Interpreted Solid Geology Of The Curnamona Province (Burtt and Betts, 2003), Musgrave Block, Central Australia: regional geology from interpretation of aeromagnetic data (Rankin and Newton, 2002), Solid Geology South Australia (Cowley, 2006).

Solid Geology

- Gairdner Dolerite
- Hiltaba Suite
- Hiltaba Suite unit 6
- Gawler Range Volcanics unit 10
- Gawler Range Volcanics unit 8
- Mesoproterozoic Grouping C rocks
- Palaeoproterozoic unit 44
- Tunkillia Suite
- Palaeoproterozoic unit 36
- Hutchison Group
- Middleback Subgroup unit 1
- Sleaford Complex

Solid Geology - Linear Structure

- Fault position accurate
- Fault position approximate

SCALE 1:250,000

KILOMETRES 5 0 5 10 15 20 25 KILOMETRES

Topographic detail based on TOPO-250K GEODATA (source scale 1:250 000) supplied by Geoscience Australia - National Mapping Division, ACT. The relationship between this data and DEM data is not guaranteed.

Computer generated from SA_GEOLOGY database
(Digital data available upon request)
Current version 2018.Digital

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Published by, and with the authority of, the Department for Energy and Mining SA.

Grey numbered lines indicate the 10000 metre Map Grid
Transverse Mercator Projection, Geocentric Datum Australia, 2020.

The lake boundaries displayed on this map may have been derived from geological interpretation and may not match lakes interpreted by topographic mapping authorities. Not all structures are represented on this particular map.

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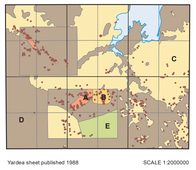
R.C. Cobcroft, Director, Geological Survey of South Australia.

Geological boundaries displayed on this map have been Derived from geological interpretation and are not intended to be used for navigational purposes.

Copies of this map can be obtained from the Department for Energy and Mining SA, Adelaide. 2020

GEOLOGICAL RELIABILITY DIAGRAM



Yardea sheet published 1988 SCALE 1:2000000

Geological Field Observations

A: Detailed ground traverses
B: Image interpretation with limited ground traverses
C: Image interpretation with potentially some minor ground traverses
D: Image interpretation only
E: Reinterpretation of existing mapping

INDEX TO 1:100 000 SHEETS

Yarloo 5933	Yardea 6033	Kolendo 6133
Minnipa 5932	Cacuppa 6032	Buckleboo 6132

INDEX TO ADJOINING 1: 250 000 SHEETS

Magnetic Declination 2000
(Annual variation +1.4 minutes)

DIGITAL EDITION
SUBJECT TO AMENDMENT
See published printed map for further information

CULTURAL FEATURES

- PRINCIPAL ROAD
- SECONDARY ROAD
- MINOR ROADS
- VEHICULAR TRACKS
- OPERATIONAL RAILWAY
- FENCE
- WATER PIPELINE
- IDENTIFIED POINT
- BUILDING
- LANDING GROUND

HYDROGRAPHIC AND GEOMORPHIC FEATURES

- INTERMITTENT LAKE
- MAJOR WATERCOURSE
- MINOR WATERCOURSE
- FLOODPLAIN
- WATERHOLE
- BORE
- WATER TANK
- SAND RIDGE

GEOLOGICAL BOUNDARY

- GEOLOGICAL BOUNDARY POSITION ACCURATE
- GEOLOGICAL BOUNDARY POSITION APPROXIMATE

LINEAR STRUCTURES

- FAULT POSITION ACCURATE
- GYPSITE DUNES
- JOINT PATTERN
- JOINT PATTERN AIRPHOTO INTERPRETED

STRUCTURAL FEATURES

- ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING
- ORIGINALLY HORIZONTAL SEDIMENTARY BEDDING - VERTICAL
- COLUMNAR JOINT AXIS
- JOINT - VERTICAL
- JOINT
- S-STYLE STRATIGRAPHIC FOLD AXIS
- SLATY CLEAVAGE - VERTICAL
- SLATY CLEAVAGE
- TECTONIC FOLIATION - VERTICAL
- TECTONIC FOLIATION
- VOLCANIC FLOW BANDING - VERTICAL
- VOLCANIC FLOW BANDING

MINING

- OCCURRENCE
- PROSPECT
- DEPOSIT - NO MINING
- QUARRY - CONSTRUCTION MATERIALS (HARD ROCK)

COMMODITIES

Ag	Silver
Au	Gold
Cu	Copper
Fe	Iron
GRNT	Granite
GRPH	Graphite
Pb	Lead
RHYO	Rhyolite
Sn	Tin
U	Uranium
W	Tungsten
Zn	Zinc

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Department for Energy and Mining

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